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| 10/696,754 | 10/29/2003 | Peter F. Gerhardinger | 1-15693 | 6675 |
| 1678 | 7590 | 09/15/2005 | EXAMINER | |
| MARSHALL & MELHORN FOUR SEAGATE, EIGHT FLOOR TOLEDO, OH 43604 | | | PAIK, SANG YEOP | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3742 | |

DATE MAILED: 09/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/696,754

Applicant(s)

GERHARDINGER, PETER F.

Examiner

Sang Y. Paik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-17 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petri et al (US 5,420,398) or Mannuss et al (US 5,489,764) in view of Lanham et al (US 6,037,574) or Button (US 3,610,888).

Petri or Mannuss shows a heating assembly including a pan made of a metal, an insulating frame/ring made of a dielectric material, a substrate made of a ceramic material further having a heating element disposed thereon, a temperature sensor, and a control system to regulate the electric current to the heating element. Petri further shows that the insulating frame is a ring, and Mannuss further shows the pan attached to the cooktop. However, neither Petri nor Mannuss shows the thin film conductive coating disposed on the substrate with at least two bus bars contacting the conductive coating.

Petri and Mannuss teach that the heating element that is disposed on the substrate can be made of a thick-film resistor. Lanham shows that it is well known to provide the thick-film or thin-film as a conductive coating that is ink printed on a substrate with bus bars or leads applied to the end portions of the conductive coating to provide the electrical connection to a current source. Button also shows that it is well known to provide a heating element in the form of a thin conductive coating made of the metal oxides on a substrate made of a borosilicate to provide a

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mechanically strong heating device with a good electrical conductivity. Button also shows the bus bars applied to the conductive coating to provide the electrical connection.

In view of Lanham or Button, it would have been obvious to one of ordinary skill in the art to adapt Petri or Mannuss with the thin-film conductive coating as an alternative heating element to the thick-film heater, providing a good conductive heating element.

With respect to claims 7, 8 and 12, it would have been obvious to one of ordinary skill in the art to apply the heating assembly taught by Petri and Mannuss, as modified by Lanham or Button, in electrical heating devices including a warming drawer, bread warmer or any other heater devices since Petri and Mannuss leave it to one of ordinary skill to apply its heating assembly to many other electrical heating devices and, furthermore, their heating devices would also have been capable of being used as a warmer drawer, a bread warmer or countertop burners having the substantially same structure as that of the claimed structure.

With respect to claim 11, while the claimed gap dimension between the substrate and cooktop is not explicitly disclosed, a gap between the cooktop and substrate is shown in Mannuss. It would have been obvious to provide the claimed gap within the claimed range to allow the heating element to radiate heat to the cooktop as well as to provide the convection heat between the cooktop and the substrate, and the claimed range would have been obvious to keep an optimal heat transfer between the cooktop and the substrate without losing heat if and when such gap is too great.

3. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over 1-15 and 17 as applied to claims above, and further in view of Youtsey et al (US 4,032,751) or Oberle (US 6,194,692).

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Petri or Mannuss in view of Lanham or Button shows the heating assembly claimed except the bus bars made of copper.

Youtsey or Oberle shows that it is well known in the art to provide the bus bars or electrical terminals made of copper. In view of Youtsey or Oberle, it would have been obvious to one of ordinary skill in the art to adapt Petri or Mannuss, as modified by Lanham or Button, with the bus bars made of copper since such material is well known in the art to provide a good electrical conductivity.

Response to Arguments

4. Applicant's arguments filed 6/29/05 have been fully considered but they are not persuasive.

The applicant argues the applied prior art does not show the claimed thin film coating. Lanham clearly shows the heating element can be made of thin film alternatively in place of thick-film or foil element, and Button also shows that thin layers or coatings are provided as the conductive coating. Thus the applicant's argument is not deemed persuasive.

With respect to Youtsey or Oberle, they are applied to teach the electrodes that are made of copper and not the thin film. Since Youtsey and Oberle show the electrode made of copper is conventional and well known, it would have been obvious to combine. The applicant argues to the claimed invention is distinguished over Youtsey and Oberle because the claimed invention requires no lamination. It is noted that both references are applied to teach the electrodes that are made of the copper material and not the structure or the way the electrodes are provided for. However, in any case, since the claim recites for the bus bars/electrodes to be disposed onto and in contact with a conductive coating, both Youtsey and Oberle meets the recited structure. In

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claim 16, the recitation of providing copper disposed “by way of a heating head and mask apparatus” is a process, and it is noted that in a product-by-process claim, the patentability is based on the product and not by the process by which the product is made if the product is same or obvious even the product is made by a different process. MPEP 2113.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y. Paik whose telephone number is 571-272-4783. The examiner can normally be reached on M-F (9:00-4:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sang Y Paik
Primary Examiner
Art Unit 3742

syp